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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/335,518	06/18/1999	FUJIO FURUHATA	Q54021	6567

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EXAMINER

YE, LIN

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/335,518

Applicant(s)

FURUHATA, FUJIO

Examiner

Lin Ye

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 June 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5-8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to **a single paragraph** on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Boyd et al. U.S.

Patent 6,166,831.

Referring to claim 1, the Boyd reference discloses in Figures 1-2 and 5-6, a color image capturing device (scanner 10), comprising: a substrate (image sensor 12) (See Col. 2, lines 42-45); and a plurality of groups of image sensing elements (shown in Figure 6), formed on

Art Unit: 2612

said substrate, which respectively correspond to a plurality of colors; wherein each of said groups of image sensing elements comprises: a plurality of rows of image sensing elements (for example row 30c and 32c as shown in Figure 5), wherein image sensing elements in each of said plurality of rows are linearly arranged on said substrate; in Figure 2, wherein each of said rows of image sensing elements is offset with respect to adjacent rows of image sensing elements by an amount which is smaller than the width (W1) of an image sensing elements in said plurality of rows of image sensing elements; and wherein said rows of image sensing elements are arranged in parallel. The Boyd reference also states that fabrication tolerances in manufacturing scanner 10 result in variations the position of pixels 34 and 36 in rows 30 and 32 can vary laterally, and inherently a separation of the rows of image sensing elements can be at least twice the height of image sensing element as long as the two rows effectively function as one row to provide a resolution of twice (See Col. 2, lines 57-67 and Col. 3, lines 1-15).

Referring to claim 2, the Boyd reference discloses wherein said plurality of groups of image sensing elements respectively correspond to the colors of red green and blue as shown in Figure 6 (See Col. 4, lines 17-21).

Referring to claim 3, the Boyd reference discloses wherein each of said groups of image sensing elements comprises: a first row (30) of image sensing elements; and a second row of image sensing elements; wherein said second row of image sensing elements is offset from said first row of image sensing elements by a predetermined amount which is equivalent to one half of the width of an image sensing element in said second row of image sensing elements as shown in Figure 2 (See Col. 3, lines 10-17).

Art Unit: 2612

Referring to claim 4, the Boyd reference discloses all subject matter as discussed with respect to same comment as with claim 3.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. U.S. Patent 6,166,831 in view of Philbrick E.P. Publication 0663763 A2.

Referring to claim 5, the Boyd reference discloses all subject matter as discussed in respect claim 1, except the reference does not explicitly states a shield is provided on a light-receiving surface of image sensing elements in said plurality of groups of image sensing elements.

The Philbrick reference discloses in Figures 5 and 6, an image capture device comprising a first and a second linear arrays of individual imaging photo detectors aligned along a scanning line; wherein a shield (51) is provided on a image sensing elements (pixels 50), shield having an opening which is smaller than a light-receiving area of said image sensing elements for shielding a periphery of said image sensing elements from light (See Col. 6, lines 1-8 and lines 20-25). The Philbrick reference is evidence that one of ordinary skill in the art at the time to see more advantages for each image sensing elements having a shielding

Art Unit: 2612

layer, because as a result, a very high aperture MTF can be obtained and low diffusion crosstalk between photodiodes of the arrays can be obtained. For that reason, it would have been obvious to see the a shield is provided on a light-receiving surface of image sensing elements in said plurality of groups of image sensing elements disclosed by Boyd.

Referring to claim 6, the Boyd reference discloses al subject matter as discussed with respected to same comment as with claim 5.

Referring to claim 7, the Boyd reference discloses al subject matter as discussed with respected to same comment as with claim 5.

Referring to claim 8, the Boyd reference discloses al subject matter as discussed with respected to same comment as with claim 5.

6. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. U.S. Patent 6,166,831 in view of Kim U.S. Patent 5,859,712.

Referring to claim 9, the Boyd reference discloses all subject matter as discussed in respected claim 1, except the reference does not explicitly shows a light source, manuscript, a plurality of mirrors and a condenser lens for the image scanner instead of just saying the object or paper being scanned (14) that is being moved relative to the image sensor (12).

The Kim reference disclose in Figure 1A, a document image scanner includes light source (lamp) for irradiating a manuscript; a plurality of mirrors for reflecting light emitted from said light source and for reflecting light reflected form a surface of said manuscript; and a condenser lens for focusing said light reflected by said mirrors. It is well known in the art that an advantage of the scanner reading an image through a man-scan by reradiating a light

Art Unit: 2612

source to one-line image on manuscript and focusing a reflective light on a linear sensor. For that reason, it would have been obvious to one of ordinary skill in the art at the time to see the scanner including a light source, manuscript, a plurality of mirrors and a condenser lens for focusing light reflected by mirrors disclosed by Boyd.

Referring to claim 10, the Boyd reference discloses al subject matter as discussed with respected to same comment as with claim 2.

Referring to claim 11, the Boyd reference discloses al subject matter as discussed with respected to same comment as with claim 3.

Referring to claim 12, the Boyd reference discloses al subject matter as discussed with respected to same comment as with claim 3.

7. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. U.S. Patent 6,166,831 in view of Kim U.S. Patent 5,859,712 and Philbrick E.P. Publication 0663763 A2.

Referring to claim 13, the Boyd and Kim references disclose all subject matter as discussed in respected claim 9, and also respected to same comment as with claim 5.

Referring to claims 14-16, the Boyd reference discloses al subject matter as discussed with respected to same comment as with claim 13.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2612

- a. Sato Nobuyuki J.P. Publication 07-273941 discloses that a solid-state image pickup device having two line sensors with different phases are integrally arranged at the same sampling pitch.
 - b. Maki et al. U.S. 5,801,850 discloses a linear sensor for sampling vertically opposed pixels of a plurality of vertically arranged sensor rows.
 - c. Hosier et al. U.S. 5,452,001 discloses a raster input scanner comprises linear array of photo-sensors arranged on a plurality of butted chips.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Lin Ye** whose telephone number is **(703) 305-3250**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on (703) 305-4929.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA., Sixth Floor (Receptionist).

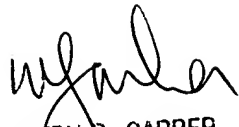
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Application/Control Number: 09/335,518

Page 8

Art Unit: 2612

Lin Ye
April 2, 2003


WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
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